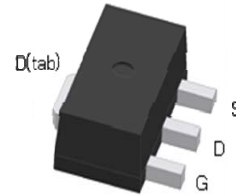


N-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

BV _{DSS}	30V
R _{DS(on)} (MAX.)	35mΩ
I _D	5.5A



Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A = 25 °C	I _D	5.5	A
	T _A = 70 °C		3.6	
Pulsed Drain Current ¹		I _{DM}	24	
Power Dissipation	T _A = 25 °C	P _D	1.47	W
	T _A = 70 °C		0.94	
Operating Junction & Storage Temperature Range		T _j , T _{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	R _{θJC}		18	°C / W
Junction-to-Ambient ³	R _{θJA}		85	

¹Pulse width limited by maximum junction temperature.

²Duty cycle ≤ 1%

³85°C / W when mounted on a 1 in² pad of 2 oz copper.

ELECTRICAL CHARACTERISTICS (T_A = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125^\circ C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	5.5			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 5.5A$		29	35	mΩ
		$V_{GS} = 4.5V, I_D = 4.5A$		40	52	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 5.5A$		11		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		332		pF
Output Capacitance	C_{oss}			83		
Reverse Transfer Capacitance	C_{rss}			26		
Total Gate Charge ^{1,2}	Q_g	$V_{DS} = 15V, V_{GS} = 10V,$ $I_D = 5.5A$		7.5		nC
Gate-Source Charge ^{1,2}	Q_{gs}			1.1		
Gate-Drain Charge ^{1,2}	Q_{gd}			2.3		
Turn-On Delay Time ^{1,2}	$t_{d(on)}$	$V_{DS} = 15V,$ $I_D = 1A, V_{GS} = 10V, R_{GS} = 6\Omega$		8		nS
Rise Time ^{1,2}	t_r			12		
Turn-Off Delay Time ^{1,2}	$t_{d(off)}$			28		
Fall Time ^{1,2}	t_f			15		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I_S				2	A
Pulsed Current ³	I_{SM}				8	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_F = I_S, dI_F/dt = 100A / \mu S$		60		nS
Reverse Recovery Charge	Q_{rr}			2		nC

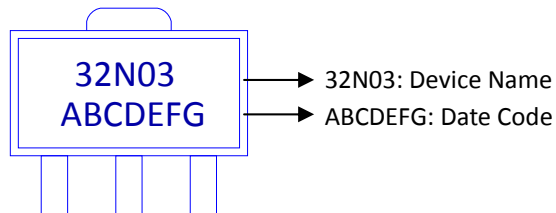
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

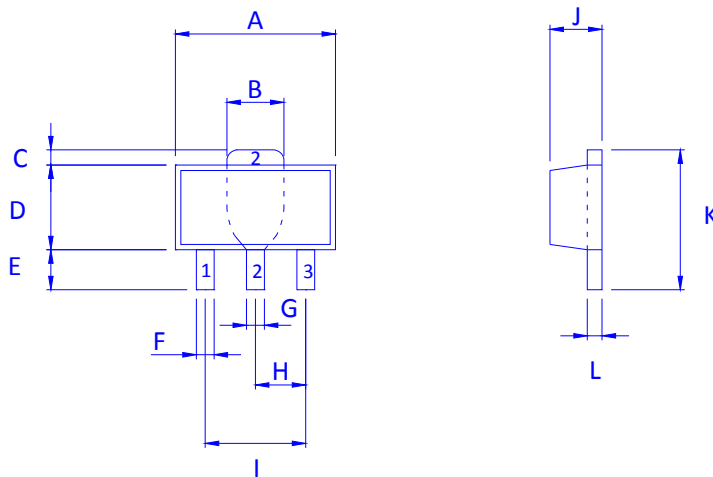
³Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: LB32N03J for SOT-89



Outline Drawing



Dimension in mm

Dimension	A	B	C	D	E	F	G	H	I	J	K	L
in.	4.30	1.60	0.40	2.40	0.80	0.40	0.40	1.40	2.80	1.30	3.80	0.30
Typ.												
Max.	4.70	1.80	0.60	2.60	1.40	0.50	0.60	1.60	3.20	1.70	4.60	0.50

Footprint

